DATA SUBMISSION GUIDELINES
WORLD WEATHER RECORDS (WWR)
NINTH SERIES (1991-2000)

A. Overview

World Weather Records (WWR) have been published since 1927, and include monthly mean values of pressure, temperature and precipitation, as well as station notes documenting observation practices and station configurations. Data submitted for the ninth series of *World Weather Records* will assure continuity of a very important global climate data set.

To assure continuity with previous series of *World Weather Records* and include as much data as possible, WMO members are encouraged to submit monthly data for the 1991-2000 period according to WMO Secretariat or regional coordinating center guidance. Simultaneous submission of station notes is also considered vital.

Given the continuing WMO sponsorship of *World Weather Records*, and in light of other WMO publications (*e.g.*, Climatological Normals for the Period 1961-90) that are organized by Regional Association, the sequence and geographic groupings of *World Weather Records* has been changed for the ninth series. With the exception of including Antarctic stations with the South-West Pacific, WWR volumes will precisely match Regional Associations beginning with the ninth series (1991-2000). The reconfigured series will contain the following volumes:

Volume Number	Previous Series	Ninth Series
1	North America	Africa
2	Europe	Asia
3	South America	South America
4	Asia	North America
5	Africa	South-West Pacific & Antarctica
6	Islands of the World	Europe

B. Submission Guidelines

B.1. Station Notes

To permit making the greatest possible use of submitted climatic data, please provide notes for all stations sent. The notes should include the following:

(a) Historical record of location, elevation, and instrumentation;

(b) Times of the observations used in computing means and times when precipitation is measured;

(c) Formulas used in computing means;

(d) Height of the barometer above mean sea level and heights of the thermometer and rain gauge above ground (to the nearest tenth of a meter);

(e) Period of record of Climatological Normal (CLINO) or other long-period average values.

Please see attached samples of previously submitted station notes.

B.2. Data

The data elements to be included for the period 1991-2000 are monthly and annual means of station pressure, sea level pressure, mean temperature, maximum temperature and minimum temperature, and monthly and annual totals of precipitation. These data are needed for the stations published in previous series of World Weather Records. Additional stations are welcome, and should include data from the earliest record available through 2000.

Beginning with the 1981-1990 decade, the data element types have been expanded to include monthly means of maximum and minimum temperature. Please include data from the earliest record available through 2000 for all stations for these additional data types if not previously provided.

B.3. Format

Data should be provided in the standard format described in detail below, which has been used in the collection process for the previous WWR series. This standard WWR format layout consists of two main parts for each station. The first format (for the 1st or header record) provides a detailed station identification record. The second (or data record) format relates to the record of the data for one element (together with the station index number) and can be further subdivided into three parts as follows:

- Ten records to contain the monthly and annual means or totals for the years 1991 to 2000 (one record for each year);

- One record to contain the decadal average for 1991-2000;

- One record to contain the CLINO or other long-period average, if such data are available.

Full descriptions of the first and second formats are given in sub-paragraphs (B.3.a) and (B.3.b), respectively, below:

(B.3.a) First (header record) format

This format can be broken down into the following fields:

(i) Field 1 (characters 1 and 2) is used for internal sort processes. The use of this field is reserved and the content is blank;

(ii) Field 2 (characters 3 to 7) is the WMO station index number. It is composed of the block number (characters 3 and 4) and the station number (characters 5 to 7);

(iii) Field 3 (character 8) is a designator of record. This is always "1" for the header record;

(iv) Field 4 (characters 9 to 19) contains the coordinates of the station. The latitude (characters 9 to 13, right justified) is given by four digits (two for degrees and two for minutes) and the hemisphere indicator, given as a letter N or S (for Northern or Southern). The longitude (characters 14 to 19, right justified) is given by five digits (three for degrees and two for minutes) and the hemisphere indicator, given as a letter E or W (for Eastern or Western);

(v) Field 5 (characters 20 to 43, left justified) is the country name in English;

(vi) Field 6 (characters 44 to 67, left justified) is the station name in English;

(vii) Field 7 (characters 68 to 72, right justified) is the height of the ground at the station above mean sea level in meters at the end of 2000. (If the ground at the station is below mean sea level, character 68 is "-" (minus));

(viii) Field 8 (characters 73 to 78, right justified) is the elevation of the station (i.e., the height of the barometer above mean sea level) in tenths of a meter, at the end of 2000. (If the barometer at the station is below mean sea level, character 73 is "-" (minus).)

Notes: (1) Characters 79 and 80 are not used.

(2) The additional characters 81 to 89 are reserved for use by the regional co-ordinating center to give a "WWR sort number" for sorting purposes only.

Please indicate in the Station Notes all changes (and the dates of these changes) that occurred in the period 1991-2000 in the WMO station index number, latitude/longitude coordinates, names, and heights referred to in the first format.

(B.3.b) Second (data record) format

This format can be broken down into the following fields:

(i) Field 1 (characters 1 and 2) is used for internal sort processes. The use of this field is reserved and the content is blank;

(ii) Field 2 (characters 3 to 7) is the WMO station index number. It is composed of the block number (characters 3 and 4) and the station number (characters 5 to 7);

(iii) Field 3 (character 8) is the element designator code. The following codes should be used:

"2" = Mean pressure at station in tenths of a hectopascal

"3" = Mean of the pressure reduced to mean sea level in tenths of a hectopascal

"4" = Mean air temperature in tenths of a degree Celsius

"5" = Total amount of precipitation in tenths of a millimeter, except for CLINO values, which should be provided to the nearest whole millimeter.

"6" = Mean of the daily maximum air temperatures in tenths of a degree Celsius

"7" = Mean of the daily minimum air temperatures in tenths of a degree Celsius

"8" = Mean of the daily relative humidity in whole percent.

(Detailed instructions for entering the data are given in sub-paragraph (vi) below);

(iv) Field 4 (characters 9 to 12) is the year (1991 to 2000 or earlier for new stations) to which the data relate. (See also sub-paragraph (v) below;)

(v) Field 5 (character 13) is the designator of multi-year average values. The following codes are used:

no entry or blank = yearly data (records 2-11)
"1" = decadal average (record 12)
"2" = CLINO or other long-period average (record 13)

Please indicate in the Stations Notes the time periods to which CLINO or other long-period averages relate. When "1" or "2" is used in the field, enter "2000" in field 4;

(vi) Field 6 (characters 14 to 78) is composed of 13 sub-fields (twelve monthly and one annual mean or total) as follows:

Characters 14 to 18: Value for January
" 19 to 23: " " February
" 24 to 28: " " March
" 29 to 33: " " April

"	34 to 38:	"	"	May
"	39 to 43:	"	"	June
"	44 to 48:	"	"	July
"	49 to 53:	"	"	August
"	54 to 58:	"	"	September
"	59 to 63:	"	"	October
"	64 to 68:	"	"	November
"	69 to 73:	"	"	December
"	74 to 78:	"	"	Annual

The following rules apply for field 6:

(1) The values should be given in the unit indicated in sub-paragraph (b) (iii) above and shall be right justified within each sub-field. If the tenth figure of a value is not available, the corresponding character should be coded "0" (zero). Decimal points are implied (i.e., 1014.1 is entered 10141).

(2) If the mean temperature is negative, the first character of the corresponding sub-field shall be coded "-" (minus).

(3) If the total amount of precipitation is zero, the fourth character of the corresponding sub-field should be coded "0" (zero). If the total amount of precipitation is "trace" (i.e. greater than zero but smaller than one-half tenth of a millimeter), the fourth and the fifth character of the corresponding field should be coded "00" (double zero).

(4) If a monthly or yearly value is missing, the corresponding sub-field should be left blank.

(5) CLINO values for precipitation should be provided to the nearest whole millimeter; in all other cases, it should be provided to tenths of a millimeter.

Note: Concerning the use of characters 79 to 89, see Notes (1) and (2) in paragraph 3 (a) above.

If data are missing for an entire year, fields 1-5 should be encoded, (as well as characters 81 to 89, by the regional coordinating center, if applicable), with field 6 left blank.

Please see attached samples of previously submitted data.

B.4. Media for providing the data

(a) Given limited funding for this project, data and station notes should be submitted

using the WWR format in a digital ASCII format. Data can be provided on diskette, transmitted via electronic mail, ftp, or internet following guidance provided by the WMO Secretariat or regional coordinating center.

(b) If necessary, the data can also be provided in the form of lists, preferably using the data sheets on the following pages. Data can be entered digitally into these data sheets using a spreadsheet program, or, as a last resort, the data sheets can serve as the template for manuscript entries. Please see attached sample data sheets.

Sample Station Notes

STATION NOTES

TRINIDAD AND TOBAGO (2 stations)

General:

All observation hours were in local time. A total of 24 hourly observations per day were used in computing the means of temperature and pressure except at Crown Point. At this station, part time operation existed during June to December 1980; January 1976; 1977, and 1978; February, March, April 1976; and for February, March, and April 1978. Observation hours during these periods were 0700 to 2300 hours or 0800 to 2200 hours.

At Piarco, the period of record of CLINO values for sea level pressure and temperature was 1946-1975. For precipitation it was 1946-1980. No CLINO exists for Crown Point since past records begin only in 1970.

Pressure:

Pressure was measured by a Kew Pattern barometer until 1974 after which a precision Aneroid type was used. Heights of the barometers were 13.4 meters at Piarco and 6.7 meters at Crown Point.

Temperature:

Thermometers, housed in a standard Stevenson Screen, were 1.2 meters above ground at both stations.

Precipitation:

Rainfall was measured by a pot gauge. A Tilting - Siphon rain recorder adjusted the pot gauge. Rainfall was measured four times daily at 0200, 0800, 1400, and 2000 hours local time at both stations except during part time operations at Crown Point. Heights of the rain gauges were .3 meters at Piarco, and 3 meters at Crown Point.

URUGUAY (13 stations)

General:

CLINO values correspond to the period 1951-80 for precipitation and 1946-1980 for other elements. Rain gauges and thermometers were located 1.5 meters above the ground.

Pressure and Temperature:

The monthly pressure and temperature values were both computed from the equation:

1/10(00+03+06+09+12+15+18+21 hours GMT + Mean Max + Mean Min)

Precipitation:

The daily values were measured at 0900 hours GMT.

Sample WWR-Formatted Data (ASCII Data)

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8562913458S07114WCHILE                  CURICO GENERAL FREIRE     228  2280
 8562921981  9890 9869 9891 9898 9900 9938 9932 9929 9935 9916 9899 9883 9907
 8562921982  9883 9885 9887 9907 9905 9915 9907 9913 9909 9916 9886 9863 9898
 8562921983  9852 9863 9873 9883 9895 9914 9912 9919 9929 9901 9891 9878 9893
 8562921984  9869 9862 9873 9898 9907 9920 9890 9927 9909 9907 9900 9862 9894
 8562921985  9875 9861 9863 9903 9901 9900 9914 9927 9904 9896 9887 9881 9893
 8562921986  9871 9871 9882 9886 9894 9908 9916 9899 9911 9902 9880 9868 9891
 8562921987  9859 9847 9862 9885 9899 9919 9872 9904 9917 9896 9882 9876 9885
 8562921988  9871 9855 9880 9891 9913 9921 9928 9927 9920 9907 9890 9877 9898
 8562921989  9855 9858 9878 9879 9906 9911 9907 9923 9904 9902 9876 9882 9890
 8562921990  9850 9876 9872 9885 9911 9915 9931 9909 9914 9909 9879 9871 9894
 85629219901 9868 9865 9876 9892 9903 9916 9911 9918 9915 9905 9887 9874 9894
 8562931981 10151101291015410165101691021210206102021020610184101631014410174
 8562931982 10143101461015010175101771018810179101851017810185101501012310165
 8562931983 10110101231013610151101671019010186101921020010167101531013710159
 8562931984 10128101231013610167101801019510163102001017810174101661012310161
 8562931985 10135101211012610173101721017110187102011017310163101501014210160
 8562931986 10131101311014710154101641018010190101701018210168101451012910158
 8562931987 10118101051012410152101711019210144101761018710163101451013610151
 8562931988 10131101141014410159101861019410202102011019210175101531013710166
 8562931989 10114101171014210146101781018410181110196101741016910139101421015 7
 8562931990 10109101371013610152101831018910206101811018410177101431013210161
 85629319901101271012510140101591017510190101841019010185101731015110135101 61
 8562941981   194  193  167  136  120   72   77   82   98  128  159  188  135
 8562941982   199  186  164  127   96   83   93   88  117  125  149  197  135
 8562941983   205  191  161  122   79   54   65   86   97  140  173  199  131
 8562941984   203  182  164  114   83   61   74   76  109  131  151  181  127
 8562941985   193  186  158  106   96   96   76   76  110  130  162  186  131
 8562941986   196  192  156  121  103   86   74   94  102  146  150  191  134
 8562941987   203  201  175  122   86   76   84   86  105  141  173  188  137
 8562941988   193  198  163  122   74   75   62   77   93  127  165  190  128
 8562941989   206  199  159  120   88   81   72   80  100  132  170  194  133
 8562941990   203  188  156  126   91   71   63   88  106  122  156  185  130
 85629419901  200  192  162  122   92   76   74   83  104  132  161  190  132
 85629419902  199  189  159  121   95   74   72   82  101  130  159  187  131
 8562951981   117   0    0    24 1911  752  446 1108  337  189    2   0  4886
 8562951982    70   0  377  147 1689 4088 2087 1151 1867  439   20   0 11935
 8562951983    83  10    3  175  559 1479 1397 1160  249    4   0     2 5121
 8562951984    0   15   30  224 2037 1352 3903 1083  652  474   67   0  9837
 8562951985     3   0  299  250 1271  261 1265   66  467  719    2   0  4603
 8562951986    0   21  188  867 2210 2162  407 1170  131  110  941   0  8207
 8562951987    0    0  115  143  780  401 3975 1499  873  291   0    00 8077
 8562951988    0    0  420  246  260 1085 1163  935  248   76   68   00 4501
 8562951989     5   0   20   22  288  640 1221 1250  301  208   80  179 4214
 8562951990     8    2  407  271  273  326  864  402  858  323  152    1 3887
 85629519901   29    5  186  237 1128 1255 1673  982  598  283  133   18 6527
 85629519902    4    1   15   32  110  149  166   98   57   36   23   12  703
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Sample Tabular Data

SOUTH AMERICA

CURICO GENERAL FREIRE CHILE

WMO Number: 85629 Latitude: 34 ° 58 ! S Longitude: 071 ° 14 ! W Elevation: 228 meters

Station Pressure (in millibars)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	MEAN
1981	989.0	986.9	989.1	989.8	990.0	993.8	993.2	992.9	993.5	991.6	989.9	988.3	990.7
1982	988.3	988.5	988.7	990.7	990.5	991.5	990.7	991.3	990.9	991.6	988.6	986.3	989.8
1983	985.2	986.3	987.3	988.3	989.5	991.4	991.2	991.9	992.9	990.1	989.1	987.8	989.3
1984	986.9	986.2	987.3	989.8	990.7	992.0	989.0	992.7	990.9	990.7	990.0	986.2	989.4
1985	987.5	986.1	986.3	990.3	990.1	990.0	991.4	992.7	990.4	989.6	988.7	988.1	989.3
1986	987.1	987.1	988.2	988.6	989.4	990.8	991.6	989.9	991.1	990.2	988.0	986.8	989.1
1987	985.9	984.7	986.2	988.5	989.9	991.9	987.2	990.4	991.7	989.6	988.2	987.6	988.5
1988	987.1	985.5	988.0	989.1	991.3	992.1	992.8	992.7	992.0	990.7	989.0	987.7	989.8
1989	985.5	985.8	987.8	987.9	990.6	991.1	990.7	992.3	990.4	990.2	987.6	988.2	989.0
1990	985.0	987.6	987.2	988.5	991.1	991.5	993.1	990.9	991.4	990.9	987.9	987.1	989.4
MEAN	986.8	986.5	987.6	989.2	990.3	991.6	991.1	991.8	991.5	990.5	988.7	987.4	989.4

Sea Level Pressure (in millibars)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	MEAN
1981	1015.1	1012.9	1015.4	1016.5	1016.9	1021.2	1020.6	1020.2	1020.6	1018.4	1016.3	1014.4	1017.4
1982	1014.3	1014.6	1015.0	1017.5	1017.7	1018.8	1017.9	1018.5	1017.8	1018.5	1015.0	1012.3	1016.5
1983	1011.0	1012.3	1013.6	1015.1	1016.7	1019.0	1018.6	1019.2	1020.0	1016.7	1015.3	1013.7	1015.9
1984	1012.8	1012.3	1013.6	1016.7	1018.0	1019.5	1016.3	1020.0	1017.8	1017.4	1016.6	1012.3	1016.1
1985	1013.5	1012.1	1012.6	1017.3	1017.2	1017.1	1018.7	1020.1	1017.3	1016.3	1015.0	1014.2	1016.0
1986	1013.1	1013.1	1014.7	1015.4	1016.4	1018.0	1019.0	1017.0	1018.2	1016.8	1014.5	1012.9	1015.8
1987	1011.8	1010.5	1012.4	1015.2	1017.1	1019.2	1014.4	1017.6	1018.7	1016.3	1014.5	1013.6	1015.1
1988	1013.1	1011.4	1014.4	1015.9	1018.6	1019.4	1020.2	1020.1	1019.2	1017.5	1015.3	1013.7	1016.6
1989	1011.4	1011.7	1014.2	1014.6	1017.8	1018.4	1018.1	1019.6	1017.4	1016.9	1013.9	1014.2	1015.7
1990	1010.9	1013.7	1013.6	1015.2	1018.3	1018.9	1020.6	1018.1	1018.4	1017.7	1014.3	1013.2	1016.1
MEAN	1012.7	1012.5	1014.0	1015.9	1017.5	1019.0	1018.4	1019.0	1018.5	1017.3	1015.1	1013.5	1016.1

Temperature (in degrees Celsius)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	MEAN
1981	19.4	19.3	16.7	13.6	12.0	7.2	7.7	8.2	9.8	12.8	15.9	18.8	13.5
1982	19.9	18.6	16.4	12.7	9.6	8.3	9.3	8.8	11.7	12.5	14.9	19.7	13.5
1983	20.5	19.1	16.1	12.2	7.9	5.4	6.5	8.6	9.7	14.0	17.3	19.9	13.1
1984	20.3	18.2	16.4	11.4	8.3	6.1	7.4	7.6	10.9	13.1	15.1	18.1	12.7
1985	19.3	18.6	15.8	10.6	9.6	9.6	7.6	7.6	11.0	13.0	16.2	18.6	13.1
1986	19.6	19.2	15.6	12.1	10.3	8.6	7.4	9.4	10.2	14.6	15.0	19.1	13.4
1987	20.3	20.1	17.5	12.2	8.6	7.6	8.4	8.6	10.5	14.1	17.3	18.8	13.7
1988	19.3	19.8	16.3	12.2	7.4	7.5	6.2	7.7	9.3	12.7	16.5	19.0	12.8
1989	20.6	19.9	15.9	12.0	8.8	8.1	7.2	8.0	10.0	13.2	17.0	19.4	13.3
1990	20.3	18.8	15.6	12.6	9.1	7.1	6.3	8.8	10.6	12.2	15.6	18.5	13.0
MEAN	20.0	19.2	16.2	12.2	9.2	7.6	7.4	8.3	10.4	13.2	16.1	19.0	13.2
CLINO	19.9	18.9	15.9	12.1	9.5	7.4	7.2	8.2	10.1	13.0	15.9	18.7	13.1

Precipitation (in millimeters)

1981	11.7	0	0	2.4	191.1	75.2	44.6	110.8	33.7	18.9	0.2	0	488.6
1982	7.0	0	37.7	14.7	168.9	408.8	208.7	115.1	186.7	43.9	2.0	0	1193.5
1983	8.3	1.0	0.3	17.5	55.9	147.9	139.7	116.0	24.9	0.4	0	0.2	512.1
1984	0	1.5	3.0	22.4	203.7	135.2	390.3	108.3	65.2	47.4	6.7	0	983.7
1985	0.3	0	29.9	25.0	127.1	26.1	126.5	6.6	46.7	71.9	0.2	0	460.3
1986	0	2.1	18.8	86.7	221.0	216.2	40.7	117.0	13.1	11.0	94.1	0	820.7
1987	0	0	11.5	14.3	78.0	40.1	397.5	149.9	87.3	29.1	0	T	807.7
1988	0	0	42.0	24.6	26.0	108.5	116.3	93.5	24.8	7.6	6.8	T	450.1
1989	0.5	0	2.0	2.2	28.0	64.0	122.1	125.0	30.1	20.8	8.0	17.9	421.4
1990	0.8	0.2	40.7	27.1	27.3	32.6	86.4	40.2	85.8	32.3	15.2	0.1	388.7

MEAN	2.9	0.5	18.6	23.7	112.8	125.5	167.3	98.2	59.8	28.3	13.3	1.8	652.7
CLINO	4	1	15	32	110	149	166	98	57	36	23	12	703